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ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Letter dated 26 October 1996 from the Permanent Representative of Iraq to the United Nations addressed to the Secretary-General

On instructions from my Government, I have the honour to transmit to you herewith an official report on the damage done to the environment in Iraq by the 30-Power aggression against the country and on the resulting health and environmental problems.

I should be grateful if you would have this letter and its annex circulated as a document of the General Assembly under agenda item 97.

(Signed) Nizar HAMDOON
Ambassador
Permanent Representative

96-29996 (E) 131196 141196

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ANNEX

The environment in Iraq following the aggression

INTRODUCTION

The aggression launched against Iraq targeted the infrastructure of the national economy, development activities and the industrial and technological progress achieved. The destruction that was caused affected all sectors, disrupted all activities and had adverse repercussions for all areas, including the environment.

As in the case of everything else that suffered damage, the familiar components of the environment - air, water and soil - were directly or indirectly affected. Completing the destruction begun by the aggression was the outbreak of sabotage directed from the outside that came immediately afterwards. Then came the prolonged economic embargo imposed under iniquitous and unjust resolutions that, although adopted by the United Nations, embodied United States policies forced upon the Organization. Although Iraq was fully aware of that fact, it nevertheless complied with all of the resolutions in question out of respect for the international community of which it forms a part. The brutal manner in which the resolutions were implemented, however, had the aim of stripping Iraq of its sovereignty, and it was impossible for the leadership and people of Iraq to accept this.

The destruction caused by the aggression against Iraq affected all sectors and extended to industry, oil production, services, agriculture and animal husbandry. It also had adverse effects on health as a result of the environmental damage done by the seepage of large quantities of hydrocarbons into the soil and the water and by the discharge, through the burning of hydrocarbons, of gaseous pollutants into the air. The destruction of electric power stations and the shortage of fuel idled pumping stations in the sanitation system as well as drinking-water purification and treatment plants.

Because waste removal vehicles are no longer serviceable, refuse has accumulated in residential neighbourhoods. Agriculture and animal husbandry have been damaged by the breakdown of most irrigation and drainage systems. The cultivation of cereals has been badly affected by the scarcity of pesticides and an increase in the rodent population. Desertification is on the rise due to the illegal cutting down of large areas of woodland in order to make up for the fuel shortage caused by the idling of the country's refineries.

An indirect effect of the aggression on the environment has been the reduction in livestock numbers, and this in turn has had a direct impact on nutrition. The reduction is due to the destruction of agricultural resources and the consequent shortage of animal fodder as well as to the lack of drugs and vaccines.

In order to mitigate the suffering of its population of 18 million by importing medicine and food, Iraq has sought to make use of its oil wealth, which accounts for most of its national income. Iraq wished to use its wealth

freely and without restriction in accordance with its own political and economic system. The resolutions adopted in order to starve and murder the people of Iraq, however, have prevented it from doing this, and they have prompted certain spokesmen for freedom in the world to call for Iraq to be given the opportunity to rescue its people from disease and starvation by permitting it to export some of its petroleum so as to import sufficient medicine and food. When a resolution was adopted by the United Nations giving States holding frozen Iraqi assets the option of releasing such funds, this was prevented by the submission of many of the governments of these States to the United States Administration out of fear of that Administration's savage brutality.

The world's humanitarian organizations and its proponents of freedom are urged to bring pressure to bear on their Governments to lift the embargo imposed on Iraq, to proceed to the immediate release of Iraqi assets and to desist from any form of interference in Iraq's internal affairs, including interference in the export by Iraq of the quantities it is permitted to export in order to meet its humanitarian needs.

I. THE OIL SECTOR

Oil is basic to the development process and to securing the country's energy supply. The destruction caused by the aggression at each of the stages of production into which the oil industry is divided and the consequent destructive impact on the environment can best be appreciated by first considering the attacks carried out against the sites and facilities belonging to the sector.

Site	Number of attacks	Date
Southern Oil Company	Multiple	Throughout the aggression
Basrah refinery	"	"
Tankers and ports	"	"
Northern Oil Company	13	22-7 February 1991
Dawrah (Dora) refinery	2	19 January-27 February 1991
Bayji (Beiji) refinery	2	2 January and 7-9 February 1991

The damage caused by these attacks is set forth hereunder:

1. Large quantities of hydrocarbons and chemicals seeped into the soil and water. In the southern region, five oil wells and a number of tankers and river tenders were set on fire, polluting the waters of the Arabian Gulf.

2. Large quantities of hydrocarbons and chemicals were set on fire, giving rise to air pollution.

3. The quantities of hydrocarbons and chemicals that seeped into the soil and water or were burnt are as follows:

(a)	Crude oil burnt	11 million barrels
(b)	Hydrogen sulphide burnt before the aggression in order to prevent adverse effects	30 million cubic metres
(c)	Natural gas burnt during the aggression	2.250 million cubic metres
(d)	Petroleum products burnt in storage tanks	1.5 million cubic metres
(e)	Cargo of tankers burnt in port	3.5 million barrels of crude oil

4. The level of damage to production equipment in oil-sector facilities, pumping stations and oil pipelines varied from 10 to 100 per cent, some damage being at the 60-per-cent level. Untreated water used for industrial purposes thus drained into adjacent areas and into rivers, contaminating the soil and water.

5. During the period of sabotage that followed the aggression, vehicles and equipment belonging to oil installations were stolen and damaged. The economic embargo imposed on the country has also prevented some of the production equipment, which must be imported, from being replaced.

6. Bomb damage to electric power stations has prevented the operation of drinking-water purification plants serving the residential complexes belonging to oil-sector installations, and oil-sector personnel have thus been required to use water from natural sources despite the environmental hazards involved.

7. Those who work in oil-sector installations and their families in the nearby residential complexes, particularly the children and women, were caused emotional stress by the enemy attacks that took place there.

II. THE INDUSTRIAL SECTOR

Most of the country's industrial installations came under direct bombardment, so that a large number were destroyed and the remainder seriously damaged. This had a devastating impact on all aspects of the environment, including water, the air and the soil. When field surveys were made of the damage caused to these installations, both direct and indirect environmental effects were noted.

1. Direct effects

(a) Many industrial establishments in which toxic or hazardous chemicals were used came under direct bombardment. Large quantities of such materials seeped into adjacent areas, some leaked into the groundwater and some evaporated, polluting the air.

(b) Some of the hydrocarbons used to provide power to industrial establishments destroyed by the aggression were burnt and some seeped into the soil and into surface water and perhaps also into the groundwater.

2. Indirect effects

(a) Most electric power stations came under direct bombardment. As a result, drinking-water purification plants and pumping stations ceased to operate and citizens were forced to use untreated water from natural sources. This caused a number outbreaks of illness.

(b) Equipment for the treatment of water used for industrial purposes was damaged during the aggression and such water was then drained untreated into the soil, surface waters and rivers.

(c) The bombardment of industrial establishments hindered the removal of wastes to designated burial sites by vehicle.

III. THE AGRICULTURAL SECTOR

1. Agricultural resources

Most agricultural enterprises suffered direct or indirect damage.

(a) Direct damage

(i) Bombardment, the digging of positions and trenches, the movement of heavy vehicles and other activities in desert areas damaged the surface layer of the soil. Wind erosion followed, and shifting sand-dunes were formed that removed the plant cover of a desert ecosystem that had been formed over hundreds of years. It will be difficult to restore this without rapid human intervention and the use of the latest scientific methods. The removal of the plant cover is causing an increase in the population of rodents, particularly mice, rats and marmots, and they have attacked nearby cultivated land and inflicted serious losses.

(ii) The direct bombardment of dams and barrages has reduced their capacity to prevent future flooding.

(b) Indirect damage

(i) The disruption of the electric power supply to most of the irrigation and drainage stations in the irrigation projects means that crops and trees have not been watered and have thus died or been adversely affected. The return of drainage water to the land from which it was drained has caused salination or resalination of reclaimed land and other cultivated land, and the areas thus damaged can be estimated at 2 million dunams. The unjust embargo imposed on the country has contributed to the stoppage of major pumping stations because the spare parts required for maintenance work are no longer available.

(ii) The suspension of the use of aircraft for agricultural purposes and a shortage of the pesticides required to control agricultural pests have caused particular damage to some 1.5 million dunams of cereal crops. Rodents are to be seen in the fields in increasing numbers, and this has caused a fall in the country's agricultural productivity.

(iii) The illegal clearing of woodland by citizens to make up for the fuel shortage caused by the aggression is damaging areas covering some 160,000 dunams.

(iv) The bombing of petroleum facilities and installations, particularly those close to rivers and irrigation sources, caused the discharge of large quantities of pollutants into rivers and water meadows. This has had an adverse impact on aquatic life and on the quality of drinking water.

(v) The tree disease that causes deformation of the date-palm crown and the citrus leaf-borer insect have made an appearance since the aggression. Although both phenomena have long been known in the country, they have never had the virulence they have shown since the aggression.

2. Saddam River

In order to surmount the economic embargo and ensure the food security of 18 million Iraqis, Iraq began implementing the gigantic Saddam River project within a year of the aggression coming to a halt.

Saddam River means much to Iraq, inasmuch as it will help to reclaim about 6 million dunams of agricultural land by removing from it some 80 million tons of salts a year. The reclamation of the land will bring the settlement of large numbers of farming families and the construction of service and communications roads. The desalination of the waters of the Tigris and the Euphrates will solve a pollution problem affecting services and industrial projects. Saddam River will, moreover, help to lower the groundwater level and thus to protect the foundations of installations built near the project.

3. Livestock

(a) The major fall in livestock numbers has had a direct impact on the nutrition of citizens, and numbers of sheep, goats, cattle and oxen have fallen to 50 per cent of their pre-war levels.

(b) The fish and poultry sectors were badly damaged by the aggression and by the shortages of feed, drugs and vaccines that it caused. The figures for these sectors before and after the aggression are as follows:

Item	Pre-aggression	Post-aggression
Broiler pullets	320 000 tons per annum	Zero
Layers	10.5 million	2 million
Breeders	200 000	Zero
Fish farms	1 684	237

The disruption of the electric power supply and the lack of spare parts have caused abattoirs to cease functioning. Artificial insemination has been disrupted and animal diseases have spread because of the widespread spoilage of antibiotics and isolates of viral and bacterial strains. All of this has caused a reduction in livestock numbers and a nutritional shortfall for 18 million Iraqi citizens.

IV. THE HEALTH SECTOR

Although the documentary information available relates only to the establishments of the Ministry of Health and not to other health institutions or the private sector (private clinics and hospitals), it can nevertheless be said that the sector as a whole was badly affected by the aggression. The statistical data are incomplete because of the abnormal conditions created by the embargo that has been maintained against the country ever since 2 August 1990. The effects of the embargo are reflected in reduced admissions to health-care establishments and in the fact that they handle only emergencies and the most urgent cases. Moreover, the aggression and the subsequent destruction of health establishments have had a direct impact on the shortage of information on this vital sector. Some comparisons and indicators are given hereunder on the basis of such statistical information as is available.

1. Malignant neoplasia

The information available shows that there is a need to continue monitoring the incidence and geographical breakdown of malignant neoplasia from 1992 onwards and to analyse the results in the light of the impact of the aggression

on the environment. It is well known that such illnesses may take a long time to appear, and for most of them the latency period is unknown.

2. Leukaemia

No increase in the incidence of leukaemia has been noted. The cases reported in 1990 and 1991 may not be related to the aggression because of the short interval between exposure to radiation and diagnosis. Continued monitoring of the incidence of leukaemia is therefore necessary in order to study the relation between exposure to carcinogens and cases reported from 1992 onwards.

3. Birth defects and deformities

A study of the environmental impact of the aggression and the economic embargo in 1991 and 1992 is still required in order to determine whether they have caused any increase in birth defects and deformities.

4. Mental illnesses

On the basis of reliable statistical comparisons, it has been noted that the number of cases of mental illness is on the rise throughout the country. There is a need to study the geographical breakdown of such cases in 1992 in the light of the impact of the aggression and the economic embargo.

5. Mental retardation

There is reliable information that there has been a slight increase in the incidence of mental retardation. There is a need to study the relation between the cases reported from 1992 onwards and the impact of the aggression and the maintenance of the economic embargo on the environment and on the quality of the primary health care provided to expectant mothers by the authorities concerned.

6. Infectious diseases

There is a need to continue monitoring the 1992 situation in order to determine the impact of the economic embargo on persisting pathogens in the environment.

7. Chronic diseases

There has been an appreciable increase in the incidence of chronic diseases, including hypertension, diabetes, heart diseases and cerebrovascular diseases. Some such diseases, such as heart and arterial disease and the various cancers, are related to such variables as psychological stress and nervous tension which, when statistics become available, may prove to have increased in 1992 as a result of the impact of the aggression on the environment and because no treatment is available owing to the embargo.

V. IMPACT OF THE AGGRESSION AND THE ECONOMIC EMBARGO ON THE CHILDREN OF IRAQ

1. Initial impact

(a) Psychological effects

The psychological effects of the bombardment of cities, the disruption of the electricity supply, the death of family members, displacement and change of residence have caused many problems for children. A recent survey indicates that 66 per cent of children fear that they will not live to reach adulthood and 80 per cent are afraid of losing a family member.

(b) Nutritional effects

The aggression and the economic embargo have caused a shortage of prepared baby food. This means that some 900,000 infants are suffering from undernourishment and some 118,000 are at moderate or high risk as a result of the food shortage.

(c) Shortage and high cost of vaccines

The aggression and the embargo have caused vaccines to spoil because of disruptions in the electricity supply and they are therefore in short supply. As a result, there has been a rise in the incidence of poliomyelitis and diphtheria.

(d) Newborn infants, infants under one, and children under five

The aggression and the economic embargo have caused health care for newborn infants to be discontinued because of problems associated with health services in hospitals, especially those involving incubators, oxygen equipment, resuscitators, medication and medicinal infant formula. There have been increases in under-five and under-one mortality for the same reasons. A recently published Harvard University study shows an increase of 3.8 per cent in mortality at these ages.

2. Future impact

(a) The psychological and social impact of the aggression on infants will produce deviant behaviour in children and adolescents and an increase in vagrancy caused by the disintegration of families owing to the death of parents, divorce or poverty.

(b) The nutritional effects of the continuing economic embargo will cause shortness of stature, low weight and childhood blindness.

(c) Implementation of the plan for the eradication of poliomyelitis in the country has been delayed by the effects of the aggression and the ongoing vaccine supply problems caused by the economic embargo.

VI. THE PUBLIC SERVICES SECTOR

The public services sector performs an important role with regard to environmental health through the annual development plans for projects for water and sanitation services and other municipal services throughout the country.

1. Drinking water

The aggression and the economic embargo, as well as the outbreaks of sabotage and robbery that followed the aggression, disrupted the electricity supply system. The lack of generators, the impossibility of obtaining the materials used for purification and sterilization (alum and chlorine) and the antiquated water distribution networks and the absence of the spare parts necessary for their repair and maintenance have brought about a deterioration in the quality of drinking water and a sharp drop in quantities supplied to citizens. As a result, water is being taken either from natural sources such as rivers and streams or is being supplied by tanker truck. A great many citizens have consequently contracted such diseases as cholera, typhoid and malaria.

2. Sanitation

Most Iraqi cities are situated on rivers, and sewage enters the rivers either after treatment or, in the case of cities that have no treatment plants, without treatment. No more than 35 per cent of the population is served by sewerage networks and sanitation projects.

The aggression caused great damage to sanitation projects, both through direct bombardment and as a result of the sabotage that followed the aggression. The indirect environmental consequences have persisted because of the disruption of the electricity supply and the breakdown of pumps in residential neighbourhoods. The sewer overflow in these areas has formed pools of stagnant water and subsidences. The suspension of purification and treatment of waste water has meant that it enters rivers directly. Some of the indirect effects are as follows:

(a) Systems have become blocked as a result of the accumulation of waste and solid matter and because cleaning was discontinued during the aggression.

(b) The overflowing of sewers in the cities because of the breakdown of pumps has caused subsidences in the streets. There are some 470 such subsidences in Baghdad alone.

(c) The breakdown of pumping stations and of equipment for the treatment of water used for industrial purposes has caused large quantities of contaminated water to be drained into the Tigris and the Euphrates. This has adversely affected the quality of the river water and its fitness for a variety of uses.

(d) The implementation of most water and sanitation projects in the governorates has been suspended and they have been postponed because construction materials are not available owing to the embargo.

3. Municipal services

The aggression has had an indirect impact on municipal services in cities, districts and subdistricts in addition to the direct impact of the bombing on infrastructure. There have thus been shortcomings in waste removal services, sewer overflow treatment, garbage collection and the clearing of bomb damage.

VII. THE USE OF DEPLETED URANIUM IN THE AGGRESSION AGAINST IRAQ

Uranium exists in nature and is customarily found in rocks and in the soil. Its concentration depends on the nature of these materials.

There are industrial methods of producing enriched uranium. Another type is known as depleted uranium, and it is customarily used in the manufacture of protective armour and of armour-piercing shells.

Although depleted uranium is low in radioactivity, it is nevertheless considered hazardous. There is a high probability that it causes cancer, and this danger is increased when a shell made of this material is fired. Children are considered to be particularly susceptible to leukaemia since their body cells divide more rapidly while they are still growing. In the case of expectant mothers, radiation may penetrate the placenta and reach the blood that nourishes the fetus. Practical demonstration has been given that depleted uranium can cause major damage to the kidneys and lungs.

Many of the foreign specialists who have visited Iraq in recent times have confirmed that during the aggression against the country the United States and its coalition partners used projectiles of various sizes, some the size of a cigarette and others having the form of heavyweight bombs, that emit gamma and beta rays and are plated with uranium. The foreign experts have stated that these are of the type that was used by the Israelis in 1967 against the Egyptian army in Sinai and that they were recently developed in Germany for use by the coalition forces against Iraq.

A number of cases of childhood leukaemia that were caused by playing with such ordnance have been reported in Iraq, and this fact was confirmed by foreign experts who saw a presentation concerning the cases of the affected children. In addition to the statements made by the foreign experts, it was recently revealed that the United States Department of Defense has implicitly acknowledged that depleted uranium was used by announcing that 35 United States soldiers who had served in tanks and armoured personnel carriers equipped with uranium shells had suffered uranium poisoning during the aggression against Iraq.

At the beginning of this year a number of foreign newspapers stated that a report from the coalition forces had concluded that at least 40 tons of depleted uranium had been scattered around Iraq and Kuwait during the aggression against Iraq. The United States Department of Defense thus became anxious to conceal the further human casualties caused by their firepower on discovering traces of radiation in damaged military vehicles belonging to the coalition forces.

Although the statistics on cases of radiation poisoning and its causes are uncertain, health experts are sufficiently convinced that the increase in the incidence of cancer and idiopathic tympanites among children is due, in at least one respect, to these radioactive shells.

In order to establish a link between the pathological symptoms and radioactive contamination of the environment, efforts must be made to conduct long-term, intensive research since the symptoms in question do not appear after a short period of time.

Recently published statistics on child mortality and its rate of increase clearly indicate that the aggression had a hand in the situation, through the pollution that has affected all aspects of the country's environment, alongside the shortages of medicines, food and vaccines caused by the economic embargo that has been maintained against Iraq since 2 August 1990.

Deaths of children in Iraq

August 1990		1992
712	Under 5	46 923
9 168	Over 5	76 530
12 727	Total	123 463